APPENDIX B
CLAIM SUPPORT IN
APPLICATION NO. 08/619,903

1. A surgical retractor comprising:	See, e.g., Figures 8-10 and 21-22.
a frame member;	Page 23, lines 2-8: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120. The pinion housings 121 and 122 rotatably retain pinions 123 and 124 driven by levers 125 and 126;"
	Page 36, lines 16-23: " Referring to Figures 21 and 22, a ninth embodiment of the access platform 610 of the present invention is shown. The access platform 610 comprises a spreader component 612 that includes a rack 613, a spreader base 614 attached to one end of the rack 613 and a pinion housing 620 slidably received over the rack 613. A pinion 621 that is driven by a lever 622 is rotatably retained in the pinion housing 620 and operably connected to the rack 613."
first and second retractor blades coupled to the frame member, the retractor blades having retraction surfaces configured to engage an incision in a patient's body, wherein at least one of the first and second retractor blades is movable with respect to the frame member along a first axis to position the retractor blades toward or away from each other;	Page 23, line 9-Page 24, line 2: " Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"
	Page 25, lines 1-11: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs;"

	Page 36, line 24-Page 37, line 18: "A fixed pivot 616 having a socket 618 formed therein, extends from the spreader base 614. A fixed pivot lock 615 with a lock screw 617 is fixedly connected to the fixed pivot 616. A moveable pivot 624 having a socket 625 formed therein, extends from the housing 620. Rotatably received in and extending from the sockets 618 and 625 are stem portions 644 and 646 of a pair of blade arms 640 and 642. The stem 644 that is received in the socket 618 of the fixed pivot 616 includes a stop 645 formed on its exterior to abut 41 the fixed pivot lock 615 and stop the travel of the stem 644. Branch portions 641 and 643 of the blade arms 640 and 642 extend downwardly from the stem portions 644 and 646 and attach to a pair of blades 650 and 652. The blade 652 that is interconnected to the moveable pivot 624 comprises a recessed throat 654 to capture a rib adjacent to an incision in the patient's chest cavity and a pair of elongated vanes 656 and 657 used to offset a plurality of the patient's ribs. The blade 650 that is interconnected to the fixed pivot 616 comprises a recessed throat 653 used to capture a rib adjacent to an incision in the patient's chest cavity;"
	Page 40, lines 21-24: " The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."
a foot coupled to one of the frame member and the first and second blades, the foot having a support surface configured to engage a surface of a patient's body, wherein the foot is adjustable in a linear direction relative to the frame member and traverse to said first axis;	Page 24, lines 3-10: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
	Page 25, lines 11-14: "When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum;"

	Page 38, line 2-Page 39, line 15: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."

a locking mechanism for locking the foot and the frame member in a selected relative position along said axis which is transverse to the first axis; and	Page 24, lines 3-7: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161;"
	Page 25, lines 11-14: "When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum;"
	Page 38, line 2-Page 39, line 15: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"

	Page 40, lines 15-21: " The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642."
an actuator for moving said at least one retractor blade with respect to the other retractor blade along the first axis.	Page 23, lines 2-8: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120. The pinion housings 121 and 122 rotatably retain pinions 123 and 124 driven by levers 125 and 126;"
	Page 25, lines 1-11: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs;"
	Page 36, lines 16-23: " Referring to Figures 21 and 22, a ninth embodiment of the access platform 610 of the present invention is shown. The access platform 610 comprises a spreader component 612 that includes a rack 613, a spreader base 614 attached to one end of the rack 613 and a pinion housing 620 slidably received over the rack 613. A pinion 621 that is driven by a lever 622 is rotatably retained in the pinion housing 620 and operably connected to the rack 613;"
	Page 40, lines 21-24: " The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."
2. The retractor of claim 1, wherein the frame member comprises an elongated bar and the first and second retractor blades are respectively coupled to first and second arms coupled to the bar, one of said arms being movable with respect to the bar along the first axis, the foot being movable in the linear direction along an axis which is transverse to the first axis.	See, e.g, Figures 8-10 and 21-22;
	Page 23, lines 2-6: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120;"

Page 23, line 9-Page 22, line 10: "Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145. Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
Page 25, lines 5-11: "After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs;"

Page 36, line 16-Page 37, line 18: "eferring to Figures 21 and 22, a ninth embodiment of the access platform 610 of the present invention is shown. The access platform 610 comprises a spreader component 612 that includes a rack 613, a spreader base 614 attached to one end of the rack 613 and a pinion housing 620 slidably received over the rack 613. A pinion 621 that is driven by a lever 622 is rotatably retained in the pinion housing 620 and operably connected to the rack 613.

A fixed pivot 616 having a socket 618 formed therein, extends from the spreader base 614. A fixed pivot lock 615 with a lock screw 617 is fixedly connected to the fixed pivot 616. A moveable pivot 624 having a socket 625 formed therein, extends from the housing 620. Rotatably received in and extending from the sockets 618 and 625 are stem portions 644 and 646 of a pair of blade arms 640 and 642. The stem 644 that is received in the socket 618 of the fixed pivot 616 includes a stop 645 formed on its exterior to abut 41 the fixed pivot lock 615 and stop the travel of the stem 644. Branch portions 641 and 643 of the blade arms 640 and 642 extend downwardly from the stem portions 644 and 646 and attach to a pair of blades 650 and 652. The blade 652 that is interconnected to the moveable pivot 624 comprises a recessed throat 654 to capture a rib adjacent to an incision in the patient's chest cavity and a pair of elongated vanes 656 and 657 used to offset a plurality of the patient's ribs. The blade 650 that is interconnected to the fixed pivot 616 comprises a recessed throat 653 used to capture a rib adjacent to an incision in the patient's chest cavity;"

	Page 38, line 2-Page 39, line 15: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."

3. The retractor of claim 1, wherein the second blade is rotatable about a second axis which is transverse to the first axis, the foot being coupled to the second blade so that the foot and the second blade rotate together about the second axis.	See, e.g., figures 20 and 21; Page 38, line 2-Page 39, line 15: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"

	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."
4. A method of retracting a portion of a patient's body to carry out a surgical procedure, the method comprising steps of:	See, e.g., Figures 8-10 and 21-22.
positioning first and second retractor blades against opposite sides of an incision formed in a patient's body, the first and second retractor blades being coupled to a frame member so as to be relatively movable toward or away from each other along a first axis; .	Page 23, line 2-Page 24, line 2: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120. The pinion housings 121 and 122 rotatably retain pinions 123 and 124 driven by levers 125 and 126. Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"

	Page 25, lines 1-11: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs;"
	Page 36, line 24-Page 37, line 18: "A fixed pivot 616 having a socket 618 formed therein, extends from the spreader base 614. A fixed pivot lock 615 with a lock screw 617 is fixedly connected to the fixed pivot 616. A moveable pivot 624 having a socket 625 formed therein, extends from the housing 620. Rotatably received in and extending from the sockets 618 and 625 are stem portions 644 and 646 of a pair of blade arms 640 and 642. The stem 644 that is received in the socket 618 of the fixed pivot 616 includes a stop 645 formed on its exterior to abut 41 the fixed pivot lock 615 and stop the travel of the stem 644. Branch portions 641 and 643 of the blade arms 640 and 642 extend downwardly from the stem portions 644 and 646 and attach to a pair of blades 650 and 652. The blade 652 that is interconnected to the moveable pivot 624 comprises a recessed throat 654 to capture a rib adjacent to an incision in the patient's chest cavity and a pair of elongated vanes 656 and 657 used to offset a plurality of the patient's ribs. The blade 650 that is interconnected to the fixed pivot 616 comprises a recessed throat 653 used to capture a rib adjacent to an incision in the patient's chest cavity;"
	Page 39, line 23-Page 40, line 14: " In operation, the blades 650 and 652 are inserted in an incision in the patient's chest such that the elongated vanes 656 and 657 of the blade 652 that is interconnected to the moveable pivot 625 are positioned under the patient's ribs while the recessed throats 653 and 654 of the blades 650 and 652 are positioned to receive the ribs that are adjacent to the incision. After the blades 650 and 652 are properly positioned, the stem 644 of the blade arm 640 is inserted through the fixed pivot lock 615 into the socket 618 of the fixed pivot 616. Meanwhile, the stem 646 of the blade arm 642 is inserted through the moveable pivot lock 626 and the end of the shoe arm 682 opposite the shoe 680, and into the socket 625 of the moveable pivot 624. The blade 650 that is interconnected to the fixed pivot 616 is then fixed in position by tightening the fixed pivot lock screw 617 to tighten the fixed pivot lock 615 around the stem 644 of the blade arm 640"
	Page 40, lines 21-24: " The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."

coupling at least one foot to the frame member so as to be adjustable with respect to the frame member in a linear direction along an axis which is transverse to the first axis, the foot having a support surface configured to rest against a surface of the patient's body adjacent the incision;	See, e.g., Page 24, lines 3-10: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
	Page 25, lines 11-23: "When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"

	Page 38, line 2-Page 39, line 15: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, lines 5-17: "After the blades 650 and 652 are properly positioned, the stem 644 of the blade arm 640 is inserted through the fixed pivot lock 615 into the socket 618 of the fixed pivot 616. Meanwhile, the stem 646 of the blade arm 642 is inserted through the moveable pivot lock 626 and the end of the shoe arm 682 opposite the shoe 680, and into the socket 625 of the moveable pivot 624. The blade 650 that is interconnected to the fixed pivot 616 is then fixed in position by tightening the fixed pivot lock screw 617 to tighten the fixed pivot lock 615 around the stem 644 of the blade arm 640. The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved."

adjusting the relative position of the foot with respect to the frame member along said linear direction and fixing the foot in a position at which the support surface of the foot rests against the surface of the patient's body adjacent the incision; and	See, e.g., Page 25, lines 11-14: "When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum;"
	Page 40, lines 15-21: " The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642."
imparting relative movement to the first and second blades to simultaneously move the blades apart along the first axis and lift one side of the incision with respect to the other side of the incision.	See, e.g., Page 25, lines 5-23: "After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"
	Page 40, lines 21-24: " The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."

5. A rib retractor for spreading apart first and second ribs to create and opening in the patient's chest, comprising:	See, e.g., Figures 8-10.
a frame;	See, e.g., Page 23, lines 2-8: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120. The pinion housings 121 and 122 rotatably retain pinions 123 and 124 driven by levers 125 and 126;"
a first blade coupled to the frame;	Page 23, line 9-Page 24, line 2: " Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"
a second blade coupled to the frame, the second blade being movable toward and away from the first blade, the second blade having a rotatable connector which permits rotation of the second blade relative to the frame;	See, e.g., Page 23, line 9-Page 24, line 2: " Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"

	Page 25, lines 1-23: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"
an actuator for moving at least one of the first and second blades toward the other of the first and second blades;	See, e.g., Page 23, lines 2-8: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120. The pinion housings 121 and 122 rotatably retain pinions 123 and 124 driven by levers 125 and 126;"
	Page 25, lines 1-11: " In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs;"

a foot coupled to at least one of the frame and the first and second blades, the foot having a support surface configured to engage the surface of the patient's chest when lifting the second rib with the second blade; and	See, e.g., Page 24, lines 3-10: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
	Page 25, lines 11-23: "When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"
a locking mechanism which selectively permits and prevents rotation of the rotatable connector, the locking mechanism being movable between a locked position, in which rotation of the rotatable connector is prevented, and an unlocked position, in which rotation of the rotatable connector is permitted, the locking mechanism being in the locked position for spreading the first and second ribs apart without lifting the second rib, the locking mechanism being in the unlocked position to permit rotation of the rotatable connector for spreading the first and second ribs apart and lifting the second rib.	See, e.g., Figures 8-10; The rack (132 and 133) and pinion (136 and 137) configuration inherently acts as a locking mechanism; Page 25, lines 1-23: ""In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"

6. The rib retractor of claim 5, wherein:	See, e.g., Figures 8-10.
the foot is linearly movable relative to the frame; and	See, e.g., Page 24, lines 3-10: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
the rib retractor also comprises a locking mechanism selectively permitting and preventing linear movement of the foot relative to the frame.	See, e.g., Page 24, lines 3-10: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
7. The rib retractor of claim 5, wherein:	See, e.g., Figures 8-10
the frame has a first arm and a second arm, the first blade being attached to the first arm and the second blade being attached to the second arm.	See, e.g., Page 23, line 9-Page 24, line 2: " Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"

	Page 25, lines 1-23: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"
8. The rib retractor of claim 7, wherein: the frame includes an elongate bar, the first and second arms being mounted to the bar, the second arm being movable along the elongate bar toward and away from the first arm along a first axis.	See, e.g., Figures 8-10. See, e.g., Page 23, line 9-Page 24, line 2: " Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"

	Page 25, lines 1-23: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"
9. The rib retractor of claim 5, wherein: the locking mechanism may be moved from the locked position to the unlocked without removing the first and second blades from the opening in the patient's chest.	See, e.g., Figures 8-10; The rack (132 and 133) and pinion (136 and 137) configuration inherently acts as a locking mechanism; Page 25, lines 1-23: ""In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"
10. A surgical retractor comprising:	See, e.g., Figures 1-2, 8-10, 16 and 21-22;
a spreader member;	See, e.g., Page 12, lines 12-15: " Preferably, the access platform 10 comprises a pair of blades 50 and 51, a pair of support pads 80 and 81, a pair of tissue retractors 70 and 71, a pair of torsional members 30 and 31, and a spreader member 12;"

	Page 12, line 22-Page 13, line 13: "Referring to Figure 2, the components of the access platform 10 are shown less the tissue retractors 70 and 71. The spreader member 12 preferably comprises a rotatable hub 14 including operably coupled upper and lower hub halves 17 and 16. A pair of spreader arms 19 and 18 extend from the upper and lower hubs 17 and 16, respectively, and connect to the torsional members 31 and 30, respectively. Preferably, the hub 14 includes a harmonic gear drive 20 used to rotate the upper hub half 17 relative to the lower hub half 16 and, thus, spread or close the spreader arms 18 and 19 to retract or relax the patient's ribs. Turning to Figure 3, the harmonic gear drive 20 comprises ring gears 21 and 22, a pinion 24, idler gears 26 and 27, and a drive hub 28. The ring gears 21 and 22 are formed on the inner walls of the upper and lower hub halves 17 and 16, respectively. The idler gears 26 and 27 are operably connected to the pinion 24 and ring gears 21 and 22;"
	Page 23, lines 2-8: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120. The pinion housings 121 and 122 rotatably retain pinions 123 and 124 driven by levers 125 and 126;"
	Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"
	Page 36, lines 16-23: " Referring to Figures 21 and 22, a ninth embodiment of the access platform 610 of the present invention is shown. The access platform 610 comprises a spreader component 612 that includes a rack 613, a spreader base 614 attached to one end of the rack 613 and a pinion housing 620 slidably received over the rack 613. A pinion 621 that is driven by a lever 622 is rotatably retained in the pinion housing 620 and operably connected to the rack 613."
first and second retractor blades coupled to the spreader member, wherein at least one of the first and second retractor blades is movable with respect to the spreader member along a first axis to position the retractor blades toward or away from each other;	See, e.g., Page 12, lines 12-15: " Preferably, the access platform 10 comprises a pair of blades 50 and 51, a pair of support pads 80 and 81, a pair of tissue retractors 70 and 71, a pair of torsional members 30 and 31, and a spreader member 12;"

Page 14, line 10-Page 15, line 5: "Referring to Figure 2, the blades 50 and 51 preferably include elongated vanes 52 and 53, which slide beneath a plurality of the patient's ribs, and recessed arcuate throats 54 and 55 that receive the patient's ribs that are adjacent to the chest incision. The benefits of the recessed throats 54 and 55 and the elongated vanes 52 and 53 will be discussed below with regard to the operation of the access platform 10. Blade arms 56 and 57 interconnect the blades 50 and 51 to the rest of the access platform 10. The blade arms 56 and 57 comprise arm stems 62 and 63 received in sockets 34 and 35 in torque bases 32 and 33. The sockets 34 and 35 and the stems 62 and 63 are constructed such that the blade arms 56 and 57 are releasably connected to the torque bases 32 and 33. The stems 62 and 63, which extend relatively horizontally from the torque bases 32 and 33, include pivot sections 60 and 61 extending therefrom. Branches 58 and 59 extend outwardly and downwardly away from the pivot sections 60 and 61 and are attached to the throats 54 and 55 of the blades 50 and 51. This blade arm construction advantageously directs the bulk of the access platform 10 away from the surgeon's working area;"
Page 23, line 9-Page 24, line 2: " Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"
Page 25, lines 1-11: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs;"

	Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"
	Page 36, line 24-Page 37, line 18: "A fixed pivot 616 having a socket 618 formed therein, extends from the spreader base 614. A fixed pivot lock 615 with a lock screw 617 is fixedly connected to the fixed pivot 616. A moveable pivot 624 having a socket 625 formed therein, extends from the housing 620. Rotatably received in and extending from the sockets 618 and 625 are stem portions 644 and 646 of a pair of blade arms 640 and 642. The stem 644 that is received in the socket 618 of the fixed pivot 616 includes a stop 645 formed on its exterior to abut 41 the fixed pivot lock 615 and stop the travel of the stem 644. Branch portions 641 and 643 of the blade arms 640 and 642 extend downwardly from the stem portions 644 and 646 and attach to a pair of blades 650 and 652. The blade 652 that is interconnected to the moveable pivot 624 comprises a recessed throat 654 to capture a rib adjacent to an incision in the patient's chest cavity and a pair of elongated vanes 656 and 657 used to offset a plurality of the patient's ribs. The blade 650 that is interconnected to the fixed pivot 616 comprises a recessed throat 653 used to capture a rib adjacent to an incision in the patient's chest cavity;"
	Page 40, lines 21-24: " The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."
a shoe coupled to one of the spreader member and the first and second blades, the shoe having a support surface configured to engage a surface of a patient's body, wherein the shoe is adjustable relative to the spreader member in a manner which is transverse to said first axis;	See, e.g., Page 12, lines 12-15: " Preferably, the access platform 10 comprises a pair of blades 50 and 51, a pair of support pads 80 and 81, a pair of tissue retractors 70 and 71, a pair of torsional members 30 and 31, and a spreader member 12;"

Page 15, line 6-Page 16, line 2: "The support pads 80 and 81 are connected to adjustable arms 86 and 87 by swivel connectors 82 and 83 that are preferably constructed as ball and socket type connectors. The adjustable arms 86 and 87 preferably include external shafts 88 and 89 slidably received over and operably connected to internal shafts 98 and 99. The external shafts 88 and 89 are preferably operably connected to the internal shafts 98 and 99 via a ratchet lever mechanism (not shown). The internal shafts 98 and 99 of the adjustable arms 86 and 87 are further connected to lock positioners 90 and 91. The lock positioners 90 and 91, which are attached to the torque bases 32 and 33, comprise a ratchet or a wrap spring type mechanism (not shown) or, alternatively, comprise opposing face gears 94 and 96, 95 and 97. Tabs 92 and 93 rotate and cooperate with cammed or serrated surfaces 36 and 37 on the outer face of the outer face gears 94 and 95 to engage and disengage the opposing face gears 96 and 97. Thus, when the tabs 92 and 93 are rotated to disengage the face gears 94 and 96, 95 and 97, the support pads 80 and 81 can be rotated to a desired position. Once the support pads 80 and 81 are in position, the tabs 92 and 93 are rotated to engage the face gears 94 and 96, 95 and 97 and, thus, lock the support pads 80 and 81 in place;"
Page 24, lines 3-10: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
Page 25, lines 11-14: "When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum;"
Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"

	Page 38, line 2-Page 39, line 15: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."

a locking member for locking the shoe and the spreader member in a selected relative position; and	See, e.g., Page 15, line 6-Page 16, line 2: "The support pads 80 and 81 are connected to adjustable arms 86 and 87 by swivel connectors 82 and 83 that are preferably constructed as ball and socket type connectors. The adjustable arms 86 and 87 preferably include external shafts 88 and 89 slidably received over and operably connected to internal shafts 98 and 99. The external shafts 88 and 89 are preferably operably connected to the internal shafts 98 and 99 via a ratchet lever mechanism (not shown). The internal shafts 98 and 99 of the adjustable arms 86 and 87 are further connected to lock positioners 90 and 91. The lock positioners 90 and 91, which are attached to the torque bases 32 and 33, comprise a ratchet or a wrap spring type mechanism (not shown) or, alternatively, comprise opposing face gears 94 and 96, 95 and 97. Tabs 92 and 93 rotate and cooperate with cammed or serrated surfaces 36 and 37 on the outer face of the outer face gears 94 and 95 to engage and disengage the opposing face gears 96 and 97. Thus, when the tabs 92 and 93 are rotated to disengage the face gears 94 and 96, 95 and 97, the support pads 80 and 81 can be rotated to a desired position. Once the support pads 80 and 81 are in position, the tabs 92 and 93 are rotated to engage the face gears 94 and 96, 95 and 97 and, thus, lock the support pads 80 and 81 in place;"
	Page 24, lines 3-7: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161;"
	Page 25, lines 11-14: "When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum;"
	Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"

	Page 38, line 2-Page 39, line 15: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, lines 15-21: " The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642."

a drive member for moving said at least one retractor blade with respect to the other retractor blade along the first axis.	See, e.g., Page 13, lines 8-20: "Turning to Figure 3, the harmonic gear drive 20 comprises ring gears 21 and 22, a pinion 24, idler gears 26 and 27, and a drive hub 28. The ring gears 21 and 22 are formed on the inner walls of the upper and lower hub halves 17 and 16, respectively. The idler gears 26 and 27 are operably connected to the pinion 24 and ring gears 21 and 22. Preferably, the effective gear ratios between the ring gears 21 and 22 are in the range of about 20-40:1, and the gear ratio between the pinion 24 and the ring gears 21 and 22 are in the range of about 3-5:1. Thus, only a relatively low torque is needed to turn the drive hub 28, which is connected to the pinion 24, to drive the ring gears 21 and 22 at a relatively high torque to rotate the upper hub 17 relative to the lower hub 16 and spread a patient's ribs apart;"
	Page 23, lines 2-8: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120. The pinion housings 121 and 122 rotatably retain pinions 123 and 124 driven by levers 125 and 126;"
	Page 25, lines 1-11: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs;"
	Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"
	Page 36, lines 16-23: " Referring to Figures 21 and 22, a ninth embodiment of the access platform 610 of the present invention is shown. The access platform 610 comprises a spreader component 612 that includes a rack 613, a spreader base 614 attached to one end of the rack 613 and a pinion housing 620 slidably received over the rack 613. A pinion 621 that is driven by a lever 622 is rotatably retained in the pinion housing 620 and operably connected to the rack 613;"

	Page 40, lines 21-24: " The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."
11. The retractor of claim 10, wherein the spreader member comprises an elongated member and the first and second retractor blades are respectively coupled to first and second arms coupled to the elongated member, one of said arms being movable with respect to the elongated member along the first axis, the shoe being movable relative to the elongated member in a manner which is transverse to the first axis.	See, e.g., Figures 8-10, 16, and 21-22.
	Page 23, lines 2-6: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120;"
	Page 23, line 9-Page 22, line 10: "Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145. Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
	Page 25, lines 5-11: "After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs;"

	Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"
	Page 36, line 16-Page 37, line 18: "eferring to Figures 21 and 22, a ninth embodiment of the access platform 610 of the present invention is shown. The access platform 610 comprises a spreader component 612 that includes a rack 613, a spreader base 614 attached to one end of the rack 613 and a pinion housing 620 slidably received over the rack 613. A pinion 621 that is driven by a lever 622 is rotatably retained in the pinion housing 620 and operably connected to the rack 613. A fixed pivot 616 having a socket 618 formed therein, extends from the spreader base 614. A fixed pivot lock 615 with a lock screw 617 is fixedly connected to the fixed pivot 616. A moveable pivot 624 having a socket 625 formed therein, extends from the housing 620. Rotatably received in and extending from the sockets 618 and 625 are stem portions 644 and 646 of a pair of blade arms 640 and 642. The stem 644 that is received in the socket 618 of the fixed pivot 616 includes a stop 645 formed on its exterior to abut 41 the fixed pivot lock 615 and stop the travel of the stem 644. Branch portions 641 and 643 of the blade arms 640 and 642 extend downwardly from the stem portions 644 and 646 and attach to a pair of blades 650 and 652. The blade 652 that is interconnected to the moveable pivot 624 comprises a recessed throat 654 to capture a rib adjacent to an incision in the patient's chest cavity and a pair of elongated vanes 656 and 657 used to offset a plurality of the patient's ribs. The blade 650 that is interconnected to the fixed pivot 616 comprises a recessed throat 653 used to capture a rib adjacent to an incision in the patient's chest cavity;"

	Page 38, line 2-Page 39, line 15: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."

12. The retractor of claim 10, wherein the second blade is rotatable about a second axis which is transverse to the first axis, the shoe being coupled to the second blade so that the shoe and the second blade rotate together about the second axis.	See, e.g., Figures 1-2, 16, and 21-22;
	Page 16, lines 3-20: " The torsional members 30 and 31 are operably connected to the torque bases 32 and 33 and the spreader arms 18 and 19 to enable the access platform 10 to both laterally retract and vertically displace a patient's ribs R. Thus, the torsional members 30 and 31 enable the access platform 10 to be advantageously self-contained such that the force necessary to spread and vertically displace a patient's ribs, and the force necessary to depress the patient's sternum, is applied by the access platform 10 itself rather than through additional external devices. The torsional members 30 and 31 preferably comprise a reduction gear assembly 40 (see Figure 4). The reduction gear assembly 40 comprises a drive nut 42 rotatably captured on the end of the shaft of the spreader arm 18 or 19, a first shaft 45 axially extending from the spreader arm 18 or 19, and a second shaft 47 extending from the torque base 32 or 33. the second shaft 47 is rotatably captured over the first shaft 45 by a shoulder screw 49;"
	Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"

	Page 38, line 2-Page 39, line 15: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."

13. A method of retracting a portion of a patient's body to carry out a surgical procedure, the method comprising steps of:	See, e.g., Figures 1-2, 8-10, 16 and 21-22.
positioning first and second retractor blades against opposite sides of an incision formed in a patient's body, the first and second retractor blades being coupled to a spreader member so as to be relatively movable toward or away from each other along a first axis;.	See, e.g., Page 12, lines 12-15: " Preferably, the access platform 10 comprises a pair of blades 50 and 51, a pair of support pads 80 and 81, a pair of tissue retractors 70 and 71, a pair of torsional members 30 and 31, and a spreader member 12;"
	Page 14, line 10-Page 15, line 5: "Referring to Figure 2, the blades 50 and 51 preferably include elongated vanes 52 and 53, which slide beneath a plurality of the patient's ribs, and recessed arcuate throats 54 and 55 that receive the patient's ribs that are adjacent to the chest incision. The benefits of the recessed throats 54 and 55 and the elongated vanes 52 and 53 will be discussed below with regard to the operation of the access platform 10. Blade arms 56 and 57 interconnect the blades 50 and 51 to the rest of the access platform 10. The blade arms 56 and 57 comprise arm stems 62 and 63 received in sockets 34 and 35 in torque bases 32 and 33. The sockets 34 and 35 and the stems 62 and 63 are constructed such that the blade arms 56 and 57 are releasably connected to the torque bases 32 and 33. The stems 62 and 63, which extend relatively horizontally from the torque bases 32 and 33, include pivot sections 60 and 61 extending therefrom. Branches 58 and 59 extend outwardly and downwardly away from the pivot sections 60 and 61 and are attached to the throats 54 and 55 of the blades 50 and 51. This blade arm construction advantageously directs the bulk of the access platform 10 away from the surgeon's working area;"
	Page 20, lines 7-20: "In operation, the blades 50 and 51 are positioned within the incision in the patient's chest P such that the vanes 52 and 53 slide under the patient's ribs R (see Figs. 6 and 7). The throats 54 and 55 of the blades 50 and 51 receive and substantially surround opposing ribs adjacent to the incision in the patient's chest P. Once the blades 50 and 51 are in position, the blades 50 and 51 are connected to the rest of the access platform 10 by inserting the stems 62 and 63 of the blade arms 56 and 57 into the sockets 34 and 35 in the torque bases 32 and 33. Next, the hub 14 of the spreader member 12 is rotated to laterally spread the spreader arms 18 and 19 apart until the blades 50 and 51 have retracted the patient's ribs R to a desired spacing;"

Page 23, line 2-Page 24, line 2: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120. The pinion housings 121 and 122 rotatably retain pinions 123 and 124 driven by levers 125 and 126. Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"
Page 25, lines 1-11: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs;"
Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"

	Page 36, line 24-Page 37, line 18: "A fixed pivot 616 having a socket 618 formed therein, extends from the spreader base 614. A fixed pivot lock 615 with a lock screw 617 is fixedly connected to the fixed pivot 616. A moveable pivot 624 having a socket 625 formed therein, extends from the housing 620. Rotatably received in and extending from the sockets 618 and 625 are stem portions 644 and 646 of a pair of blade arms 640 and 642. The stem 644 that is received in the socket 618 of the fixed pivot 616 includes a stop 645 formed on its exterior to abut 41 the fixed pivot lock 615 and stop the travel of the stem 644. Branch portions 641 and 643 of the blade arms 640 and 642 extend downwardly from the stem portions 644 and 646 and attach to a pair of blades 650 and 652. The blade 652 that is interconnected to the moveable pivot 624 comprises a recessed throat 654 to capture a rib adjacent to an incision in the patient's chest cavity and a pair of elongated vanes 656 and 657 used to offset a plurality of the patient's ribs. The blade 650 that is interconnected to the fixed pivot 616 comprises a recessed throat 653 used to capture a rib adjacent to an incision in the patient's chest cavity;"
	Page 39, line 23-Page 40, line 14: " In operation, the blades 650 and 652 are inserted in an incision in the patient's chest such that the elongated vanes 656 and 657 of the blade 652 that is interconnected to the moveable pivot 625 are positioned under the patient's ribs while the recessed throats 653 and 654 of the blades 650 and 652 are positioned to receive the ribs that are adjacent to the incision. After the blades 650 and 652 are properly positioned, the stem 644 of the blade arm 640 is inserted through the fixed pivot lock 615 into the socket 618 of the fixed pivot 616. Meanwhile, the stem 646 of the blade arm 642 is inserted through the moveable pivot lock 626 and the end of the shoe arm 682 opposite the shoe 680, and into the socket 625 of the moveable pivot 624. The blade 650 that is interconnected to the fixed pivot 616 is then fixed in position by tightening the fixed pivot lock screw 617 to tighten the fixed pivot lock 615 around the stem 644 of the blade arm 640;"
	Page 40, lines 21-24: " The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."

coupling at least one shoe to the spreader member so as to be adjustable with respect to the spreader member in a manner which is transverse to the first axis, the shoe having a support surface configured to rest against a surface of the patient's body adjacent the incision;	See, e.g., Page 24, lines 3-10: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
	Page 25, lines 11-23: "When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"
	Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"

	Page 38, line 2-Page 39, line 15: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, lines 5-17: "After the blades 650 and 652 are properly positioned, the stem 644 of the blade arm 640 is inserted through the fixed pivot lock 615 into the socket 618 of the fixed pivot 616. Meanwhile, the stem 646 of the blade arm 642 is inserted through the moveable pivot lock 626 and the end of the shoe arm 682 opposite the shoe 680, and into the socket 625 of the moveable pivot 624. The blade 650 that is interconnected to the fixed pivot 616 is then fixed in position by tightening the fixed pivot lock screw 617 to tighten the fixed pivot lock 615 around the stem 644 of the blade arm 640. The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved."

adjusting the relative position of the shoe with respect to the spreader member and fixing the shoe in a position at which the support surface of the shoe rests against the surface of the patient's body adjacent the incision; and	See, e.g., Page 17, lines 20-22: " The support pads 80 and 81 are then lowered to rest on the patient's chest and locked in place with lock positioners 90 and 91;"
	Page 25, lines 11-14: "When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum;"
	Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"
	Page 40, lines 15-21: " The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642."
imparting relative movement to the first and second blades to simultaneously move the blades apart along the first axis and lift one side of the incision with respect to the other side of the incision.	Page 20, line 17-Page 21, line 1: "Next, the hub 14 of the spreader member 12 is rotated to laterally spread the spreader arms 18 and 19 apart until the blades 50 and 51 have retracted the patient's ribs R to a desired spacing. The support pads 80 and 81 are then lowered to rest on the patient's chest and locked in place with lock positioners 90 and 91. At this point, the torque bases 32 and 33 are rotated relative to the torsional members 30 and 31 to displace in an essentially vertical direction the blades 50 and 51, and ultimately the patient's ribs R, relative to each other;"

	Page 25, lines 5-23: "After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"
	Page 32, lines 9-22: "Alternatively, a fifth embodiment of the access platform 310 is shown in Figure 16 to comprise a combination of components from the first and fourth embodiments. More particularly, the torsional members 30 and 31 of the first embodiment are interposed between and operably connected to the fingers 330A and 330B and the housing 322, and interposed between and operably connected to the fingers 332A and 332B and the spreader base 328, respectively. In addition, the support pads 80 and 81 of the first embodiment are adjustably attached to the fingers 330A and 332B. By including the torsional members 30 and 31 and the support pads 80 and 81, a second axis of rotation A_2 is provided. Thus, as in the first embodiment, the torsional members 30 and 31 enable the access platform 310 to vertically displace the blades 350 and 352 and the retracted ribs;"
	Page 40, lines 21-24: " The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."
14. A rib retractor for spreading apart first and second ribs to create and opening in the patient's chest, comprising:	See, e.g., Figures 8-10 and 21-22.
a spreader;	See, e.g., Page 23, lines 2-8: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120. The pinion housings 121 and 122 rotatably retain pinions 123 and 124 driven by levers 125 and 126;"

	Page 36, lines 16-23: " Referring to Figures 21 and 22, a ninth embodiment of the access platform 610 of the present invention is shown. The access platform 610 comprises a spreader component 612 that includes a rack 613, a spreader base 614 attached to one end of the rack 613 and a pinion housing 620 slidably received over the rack 613. A pinion 621 that is driven by a lever 622 is rotatably retained in the pinion housing 620 and operably connected to the rack 613."
a first blade coupled to the spreader;	Page 23, line 9-Page 24, line 2: " Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"
	Page 36, line 24-Page 33, line 18: "A fixed pivot 616 having a socket 618 formed therein, extends from the spreader base 614. A fixed pivot lock 615 with a lock screw 617 is fixedly connected to the fixed pivot 616. A moveable pivot 624 having a socket 625 formed therein, extends from the housing 620. Rotatably received in and extending from the sockets 618 and 625 are stem portions 644 and 646 of a pair of blade arms 640 and 642. The stem 644 that is received in the socket 618 of the fixed pivot 616 includes a stop 645 formed on its exterior to abut 41 the fixed pivot lock 615 and stop the travel of the stem 644. Branch portions 641 and 643 of the blade arms 640 and 642 extend downwardly from the stem portions 644 and 646 and attach to a pair of blades 650 and 652. The blade 652 that is interconnected to the moveable pivot 624 comprises a recessed throat 654 to capture a rib adjacent to an incision in the patient's chest cavity and a pair of elongated vanes 656 and 657 used to offset a plurality of the patient's ribs. The blade 650 that is interconnected to the fixed pivot 616 comprises a recessed throat 653 used to capture a rib adjacent to an incision in the patient's chest cavity;"
	Page 40, lines 21-24: "The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."

a second blade coupled to the spreader, the second blade being movable toward and away from the first blade, the second blade having a rotatable connector which permits rotation of the second blade relative to the spreader;	See, e.g., Page 23, line 9-Page 24, line 2: " Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"
	Page 25, lines 1-23: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"

	Page 36, line 24-Page 33, line 18: "A fixed pivot 616 having a socket 618 formed therein, extends from the spreader base 614. A fixed pivot lock 615 with a lock screw 617 is fixedly connected to the fixed pivot 616. A moveable pivot 624 having a socket 625 formed therein, extends from the housing 620. Rotatably received in and extending from the sockets 618 and 625 are stem portions 644 and 646 of a pair of blade arms 640 and 642. The stem 644 that is received in the socket 618 of the fixed pivot 616 includes a stop 645 formed on its exterior to abut 41 the fixed pivot lock 615 and stop the travel of the stem 644. Branch portions 641 and 643 of the blade arms 640 and 642 extend downwardly from the stem portions 644 and 646 and attach to a pair of blades 650 and 652. The blade 652 that is interconnected to the moveable pivot 624 comprises a recessed throat 654 to capture a rib adjacent to an incision in the patient's chest cavity and a pair of elongated vanes 656 and 657 used to offset a plurality of the patient's ribs. The blade 650 that is interconnected to the fixed pivot 616 comprises a recessed throat 653 used to capture a rib adjacent to an incision in the patient's chest cavity;"
	Page 40, lines 21-24: "The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."
a drive member for moving at least one of the first and second blades toward the other of the first and second blades;	See, e.g., Page 23, lines 2-8: " A second embodiment of the access platform 110 is shown in Figures 8, 9 and 10. The second embodiment of the access platform 110 includes a spreader member 112 preferably comprising a horizontally disposed rack 120 and pinion housings 121 and 122 slidably disposed over the rack 120. The pinion housings 121 and 122 rotatably retain pinions 123 and 124 driven by levers 125 and 126;"
	Page 25, lines 1-11: " In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs;"
	Page 36, lines 16-23: " Referring to Figures 21 and 22, a ninth embodiment of the access platform 610 of the present invention is shown. The access platform 610 comprises a spreader component 612 that includes a rack 613, a spreader base 614 attached to one end of the rack 613 and a pinion housing 620 slidably received over the rack 613. A pinion 621 that is driven by a lever 622 is rotatably retained in the pinion housing 620 and operably connected to the rack 613."
	Page 40, lines 21-24: "The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."

a shoe coupled to at least one of the spreader and the first and second blades, the shoe having a support surface configured to engage the surface of the patient's chest when lifting the second rib with the second blade; and	See, e.g., Page 24, lines 3-10: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
	Page 25, lines 11-23: "When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"

	Page 38, line 2-Page 39, line 22: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."

a locking member which selectively permits and prevents rotation of the rotatable connector, the locking member being movable between first and second positions, the locking member being in the first position for spreading the first and second ribs apart without lifting the second rib, the locking member being in the second position for spreading the first and second ribs apart and lifting the second rib.	See, e.g., Figures 8-10; The rack (132 and 133) and pinion (136 and 137) configuration inherently acts as a locking mechanism; Page 25, lines 1-23: ""In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"

	Page 38, line 2-Page 39, line 22: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."

15. The rib retractor of claim 14, wherein:	See, e.g., Figures 8-10 and 21-22.
the shoe is movable relative to the spreader; and	See, e.g., Page 24, lines 3-10: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"
	Page 38, line 2-Page 39, line 22: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"

	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."
the rib retractor also comprises a second locking member selectively permitting and preventing linear movement of the shoe relative to the spreader.	See, e.g., Page 24, lines 3-10: " Preferably, one end of the horizontally disposed rack 120 is connected to a slide 172 of a lock positioner 171. The slide 172 is slidably received over a vertically disposed support pad stanchion 167. The stanchion 167 has ratchet gear teeth 173 formed thereon which cooperate with a ratchet lever 174 attached to the slide 172 to adjustably position the support pad 161. The support pad 161 is adjustably connected to the stanchion 167 by a swivel connector 163;"

	Page 38, line 2-Page 39, line 22: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"
	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."

16. The rib retractor of claim 14, wherein: the shoe is coupled to the second blade so that the shoe and the second blade are rotatable together.	See, e.g., Figures 21-22; Page 38, line 2-Page 39, line 22: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"

	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."
17. The rib retractor of claim 14, wherein: the spreader has a first arm and a second arm, the first blade being attached to the first arm and the second blade being attached to the second arm.	See, e.g., Figures 8-10 and 21-22; See, e.g., Page 23, line 9-Page 24, line 2: " Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"

	Page 25, lines 1-23: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"
	Page 36, line 24-Page 33, line 18: "A fixed pivot 616 having a socket 618 formed therein, extends from the spreader base 614. A fixed pivot lock 615 with a lock screw 617 is fixedly connected to the fixed pivot 616. A moveable pivot 624 having a socket 625 formed therein, extends from the housing 620. Rotatably received in and extending from the sockets 618 and 625 are stem portions 644 and 646 of a pair of blade arms 640 and 642. The stem 644 that is received in the socket 618 of the fixed pivot 616 includes a stop 645 formed on its exterior to abut 41 the fixed pivot lock 615 and stop the travel of the stem 644. Branch portions 641 and 643 of the blade arms 640 and 642 extend downwardly from the stem portions 644 and 646 and attach to a pair of blades 650 and 652. The blade 652 that is interconnected to the moveable pivot 624 comprises a recessed throat 654 to capture a rib adjacent to an incision in the patient's chest cavity and a pair of elongated vanes 656 and 657 used to offset a plurality of the patient's ribs. The blade 650 that is interconnected to the fixed pivot 616 comprises a recessed throat 653 used to capture a rib adjacent to an incision in the patient's chest cavity;"
	Page 40, lines 21-24: "The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."

18. The rib retractor of claim 17, wherein: the spreader includes an elongate member, the first and second arms being mounted to the elongate member, the second arm being movable along the elongate member toward and away from the first arm along a first axis.	See, e.g., Figures 8-10 and 21-22;
	See, e.g., Page 23, line 9-Page 24, line 2: " Torsional members 130 and 131 preferably comprise curved racks 132 and 133 slidably received within pinion housings 134 and 135. The pinion housings 134 and 135 are fixedly attached to the pinion housings 122 and 121. The pinion housings 134 and 135 rotatably retain pinions 136 and 137 driven by levers 138 and 139. Sockets 154 and 155 are formed in the lower ends of the curved racks 132 and 133. Stems 152 and 153 of blade arms 146 and 147 are releasably received by and horizontally extend from the sockets 154 and 155. The blade arms 146 and 147 further comprise pivot sections 150 and 151 extending horizontally from the stems 152 and 153. Branches 148 and 149 extend downwardly and outwardly from the pivot sections 150 and 151 of the blade arms 146 and 147 to position the remainder of the access platform 110 away from the surgeon's working area. Branches 148 and 149 attach to blades 140 and 141. The blades 140 and 141 comprise elongated vane sections 142 and 143 extending outwardly from recessed throat sections 144 and 145;"
	Page 25, lines 1-23: "In operation, the blades 140 and 141 are inserted in an incision in the patient's chest such that the blade vanes 142 and 143 slide under the patient's ribs and the recessed throats 144 and 145 of the blades 140 and 141 receive the ribs that are adjacent to the incision. After the blades 140 and 141 are properly positioned, the stems 152 and 153 of the blade arms 146 and 147 are inserted into the sockets 154 and 155 of the torsional members 130 and 131 to connect the blades 140 and 141 to the remainder of the access platform 110. The levers 126 and 125 are then rotated to drive the pinions 121 and 122 over the rack 120 to laterally retract the ribs. When a desired spacing between the retracted ribs is met, the support pads 160 and 161 are positioned on the chest of the patient, with support pad 160 being preferably positioned on the patient's sternum. The levers 138 and 139 then are rotated to drive the pinions 136 and 137 to draw the curved racks 132 and 133 through the pinion housing 134 and 135 to vertically displace the blades 140 and 141 and the retracted ribs. As the blade 140 is retracted upwards the support pad 160 preferably depresses the sternum creating a greater deflection in the patient's rib cage and, thus, creating a greater "tunnel" effect underneath the patient's rib cage, to increase the surgeon's working space and visual access for dissection of the IMA;"

	Page 36, line 24-Page 33, line 18: "A fixed pivot 616 having a socket 618 formed therein, extends from the spreader base 614. A fixed pivot lock 615 with a lock screw 617 is fixedly connected to the fixed pivot 616. A moveable pivot 624 having a socket 625 formed therein, extends from the housing 620. Rotatably received in and extending from the sockets 618 and 625 are stem portions 644 and 646 of a pair of blade arms 640 and 642. The stem 644 that is received in the socket 618 of the fixed pivot 616 includes a stop 645 formed on its exterior to abut 41 the fixed pivot lock 615 and stop the travel of the stem 644. Branch portions 641 and 643 of the blade arms 640 and 642 extend downwardly from the stem portions 644 and 646 and attach to a pair of blades 650 and 652. The blade 652 that is interconnected to the moveable pivot 624 comprises a recessed throat 654 to capture a rib adjacent to an incision in the patient's chest cavity and a pair of elongated vanes 656 and 657 used to offset a plurality of the patient's ribs. The blade 650 that is interconnected to the fixed pivot 616 comprises a recessed throat 653 used to capture a rib adjacent to an incision in the patient's chest cavity;"
	Page 40, lines 21-24: "The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized."

19. The rib retractor of claim 14, wherein: the locking member may be moved from a locked position to an unlocked position without removing the first and second blades from the opening in the patient's chest.	See, e.g., Figures 8-10 and 21-22; Page 38, line 2-Page 39, line 22: "The branch portion 643 of the blade arm 642 that is interconnected to the moveable pivot 624 extends higher vertically than the branch portion 641 of the blade arm 640 that is interconnected to the fixed pivot 616. (see Figure 22) This construction tends to cause the ribs that are retracted by the blades 650 and 652 to be vertically offset relative to one another. To add additional offset, a torsional component 630 is included on the access platform 610. The torsional component 630 comprises a rib compression shoe 680, a substantially "S" shaped shoe arm 682 connected to the shoe 680 at one end and pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624 at the other end, and an adjustable offset link 632 connected to the pinion housing 620 and operably connected to the shoe arm 682 and shoe the 680. The shoe 680 has an arcuate front profile and a rectangular top profile. A moveable pivot lock 626 with a lock screw 627 is fixedly mounted to the end of the shoe arm 682 that is pivotally connected to the stem 646 of the blade arm 642 that is interconnected to the moveable pivot 624. The offset link 632 comprises a substantially "L" shaped base 631 that extends from the pinion housing 620 at one end and terminates at the other end in a pair of parallel spaced and arcuate shaped fingers 633 and 634. A bushing 635 having a hole tapped through its center perpendicular to the bushing's 635 longitudinal axis, is rotatably captured by the fingers 633 and 634. An adjustable offset drive screw 636 is threaded through the hole in the bushing 635 and is operably connected to the shoe arm 682. The adjustable offset drive screw 636 comprises a handle 637 attached to the top of a jack screw 638. The base of the jack screw 638 is formed as a full radius sphere 639. The sphere 639 operably couples with a full radius recess 686 cut into a boss 684 that extends outwardly from the shoe arm 682. The boss 684 is tilted upwardly at an angle Θ relative to the longitudinal axis of the shoe arm 682. This construction ensures that the sphere 639 will maintain contact with the boss 684 during operation as the jack screw 637 forces the shoe arm 682 and shoe 680 to rotate downwardly in a clockwise direction;"

	Page 40, line 15-Page 41, line 7: "The rib compression shoe 680 is then adjusted by adjusting the adjustable offset drive screw 636 until the desired compression of the ribs is achieved. The blade 652 that is interconnected to the moveable pivot 624 is then temporarily fixed in position relative to the shoe 680 by tightening the moveable pivot lock screw 627 to tighten the moveable pivot lock 626 around the stem 646 of the blade arm 642. The ribs are then separated and offset by rotating the lever 622 to drive the pinion 621 along the rack 613 until a desired opening width and offset height is realized. Further adjustment of offset height may be obtained by first loosening the moveable pivot lock 626 around the stem 646 of the blade arm 642 and then adjusting the adjustable offset drive screw 636 to cause the shoe 680 and the shoe arm 682 to rotate downwardly in a clockwise direction and, also, cause the blade 652 that is interconnected to the moveable pivot 624 to rotate upwardly in a clockwise direction, until a desired offset is achieved."